National Institute of Environmental Health Sciences

Ambient temperature and risk of death from accidental drug overdose in New York City, 1990-2006

Author(s): Bohnert ASB, Prescott MR, Vlahov D, Tardiff KJ, Galea S
Year: 2010
Journal: Addiction. 105 (6): 1049-1054

Abstract:

Background Mortality increases as ambient temperature increases. Because cocaine affects core body temperature, ambient temperature may play a role in cocaine-related mortality in particular. The present study examined the association between ambient temperature and fatal overdoses over time in New York City. Methods Mortality data were obtained from the Office of the Chief Medical Examiner for 1990 to 2006, and temperature data from the National Oceanic and Atmospheric Association. We used generalized additive models to test the relationship between weekly average temperatures and counts of accidental overdose deaths in New York City, controlling for year and average length of daylight hours. Results We found a significant relation between ambient temperature and accidental overdose fatality for all models where the overdoses were due in whole or in part to cocaine (all $P < 0.05$), but not for non-cocaine overdoses. Risk of accidental overdose deaths increased for weeks when the average temperature was above 24 degrees Celsius. Conclusions These results suggest a strong relation between temperature and accidental overdose mortality that is driven by cocaine-related overdoses rising at temperatures above 24 degrees Celsius; this is a substantially lower temperature than prior estimates. To put this into perspective, approximately 7 weeks a year between 1990 and 2006 had an average weekly temperature of 24 or above in New York City. Heat-related mortality presents a considerable public health concern, and cocaine users constitute a high-risk group.

Source: http://dx.doi.org/10.1111/j.1360-0443.2009.02887.x

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

United States

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Injury, Mental Health/Stress

Mental Health Effect/Stress: Substance-Induced Disorder

Population of Concern: A focus of content

Other Vulnerable Population: cocaine users

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified